REMARKS

In response to the Office Action dated April 18, 2005, Applicants respectfully request reconsideration of the rejections of the claims. The withdrawal of the previous objections and rejections is noted with appreciation.

The Examiner's Amendment to claims 13 and 22 is reflected in the foregoing Listing of Claims.

Claims 2-4, 16 and 19 were rejected under 35 USC 102, on the grounds that they were considered to be anticipated by the newly-cited Murakami et al patent (US 5,268,771). In relevant part, the Office Action states that the Murakami patent discloses a significance coefficient, with reference to Figures 7A-7C and column 7, lines 25-30 and 54-61. It is respectfully submitted, however, that the coefficients disclosed in the Murakami patent are not the same as the significance coefficients that are derived from the image in accordance with the claimed invention. The Murakami patent discloses a technique in which three coefficient matrices are established, as respectively illustrated in Figures 7A-7C. A convolution processor 500 multiplies input image data by each of the three sets of coefficients, individually, to produce three sets of restoration data. A selector 400 then selects one of these three sets of data to produce the final result.

In this type of system, the coefficients that are used in the convolution processor are *predetermined*. See column 7, lines 50-51. In other words, they are independent of the image data itself. In contrast, in the context of the present invention, the significance coefficients are derived from the values of the pixels in the image. As recited in claim 3, for example, each significance coefficient provides an indication of the likelihood that the value of a neighborhood pixel in the original image is correlated with the value of a particular pixel of interest, identified as the "individual pixel," in the image. Thus, the

significance coefficient is based upon the value of the neighborhood pixel. Unlike the predetermined coefficients of the Murakami patent that are established ahead of time, the significance coefficients of the present invention are computed dynamically during the processing of the image, since they are derived from the image data itself.

To clarify this distinction, claims 2 and 16 now recite that the significance coefficients are "based upon the value of that pixel," i.e. the neighborhood pixel. The coefficients of the Murakami patent are not determined on the basis of actual pixel values. Rather, as noted in the Office Action, they are predetermined in accordance with their distance from the target pixel. For at least this reason, therefore, the subject matter of claims 2-4, 16 and 19 is not anticipated by the Murakami patent.

As noted above, claim 3 recites that the significance coefficient indicates the likelihood that the value of a neighborhood pixel in the original image is correlated with the value of the individual pixel, i.e. the pixel being processed, in the original image. With reference to the Murakami patent, the Office Action states that the distance of the pixels from the target pixel, combined with the gradient of the overall neighborhood, provides a significance coefficient for each neighborhood pixel. However, these "coefficients" are not related to the *values* of the pixels in the original image. Rather, as noted above, they are *predetermined*, and therefore independent of the image values themselves. Accordingly, the coefficients described in the Murakami patent do not provide the type of indication recited in claim 3.

For similar reasons, the Murakami patent does not anticipate the subject matter of claim 4. In particular, it does not disclose that the significance coefficient is derived as a function of the halftone *value* for a neighborhood pixel in the image.

All other pending claims were rejected under 35 U.S.C. 103 on the basis of the Murakami patent in view of the Wong patent (US 5,506,699). In part, the Office Action acknowledges that the Murakami patent does not disclose an iterative process to reconstruct an image, but concludes that it would be obvious to do so in light of the Wong patent. It is respectfully submitted, however, that it would not be obvious to modify the teachings of the Murakami patent in such a manner.

First, as noted above, the system of the Murakami patent utilizes a *selection* process to obtain a restored image. In this process, the input image is individually processed in accordance with three different sets of coefficients, respectively, and then one of the three resulting sets of data is selected for the output. The patent characterizes the result of the selection as being the "final" output data. See column 6, lines 47-51. In this type of system, there would be no reason to utilize an iterative procedure, i.e. to run the output of the selector back through the convolution processor 500 a number of successive times. Once the most appropriate set of convolved data is selected for the output, there is no need to generate three more sets of data and perform another selection.

Second, in support of the contention of obviousness, the Office Action states that the method of the Murakami patent will inherently have some level of error, and "[i]teratively performing such a method allows for convergence of solution, thereby obtaining a result with less overall error." It is respectfully submitted that iterative repetition of the Murakami method would lead to less desirable results, and therefore would not be obvious. More particularly, the method disclosed in the Murakami patent is essentially a filtering process, in which the input image data is multiplied by a set of filter coefficients. In the field of image processing, it is well known that too much filtering (of any kind) introduces

blurring in the resulting image, which is undesirable. Hence, it would not be obvious to modify the process of the Murakami patent in the manner suggested in the Office Action.

For at least these reasons, therefore, it is respectfully submitted that it would not be obvious to modify the method of the Murakami patent to employ an iterative process. Consequently, the teachings of the references do not suggest the subject matter of claims 1, 5-9, 11-13, 18, 20 and 22 to a person of ordinary skill in the art.

In addition, various ones of the dependent claims recite other distinguishing features that are not taught by the references. For instance, claim 5 recites that the baseline value that is used to obtain a significance coefficient is derived by low-pass filtering the halftone image. While the Wong patent discloses that the image can be low-pass filtered, it does not disclose that the results of such filtering are used to derive a significance coefficient of the type recited in the claims, or filter coefficients of the type disclosed in the Murakami patent.

Claim 6 recites that the significance coefficient is a function of the halftone value at the neighborhood pixel and the baseline value for the individual pixel. For reasons similar to those presented in connection with claims 3 and 4, the Murakami patent does not disclose this subject matter. In particular, it does not disclose that its coefficients are determined on the basis of the *values* of the pixels in the image.

Claims 7-9 depend from claim 6, and are not suggested by the Murakami reference for at least the same reasons.

Similar to claims 2 and 16, claims 14 and 17 recite that the significance coefficient is based upon the value of the neighborhood pixel. For the reasons presented previously, it

is respectfully submitted that the Murakami patent does not suggest the claimed subject matter, whether considered by itself or in light of the Wong patent.

Reconsideration and withdrawal of the rejections, and allowance of all pending claims, are respectfully requested.

Respectfully submitted,

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